

CAPINTEC, INC.
CRC-ULTRA

The Multi-Functional Dose Calibration Unit

This product is available through:

JRT Associates 800-221-0111



The Path Towards Multi-Functionality Starts Here

***With the Ability to Connect
to Multiple Chambers, the
Possibilities are Endless!***

Capintec is proud to pioneer an exciting new multi-chamber concept, allowing you to design your department! The **CRC®Ultra Dose Calibrator** provides a wide range of features that are frequently needed in nuclear medicine, PET facilities, research laboratories or in the manufacturing of radiopharmaceuticals.

Up to eight ionization chambers, plus one well counter and one beta counter can be linked together. In addition, each ionization chamber can also support a remote display for ultimate visibility. Units are field upgradeable at any time to support future growth or new applications as your department grows.

Example Configurations

These Are Just Some of the Many Combinations that the CRC®-Ultra Dose Calibrator Can Accommodate!

Configuration A: Beginner Package



(1) Readout Unit & Ion Chamber: Item # 5130-3209

Start here with the CRC®-Ultra readout unit and single chamber setup. Once your department is settled, let the CRC®-Ultra grow as your department expands, by adding additional chambers and counters as you see fit.

Configuration B: Nuclear Medicine & PET



(1) Readout Unit & Ion Chamber: Item # 5130-3209 (1) PET Ion Chamber: Item # 5130-2212

This dual chamber configuration gives you the advantage of a second chamber that allows the measurement of higher activity PET doses, with all of the great performance capabilities and software features of the CRC®-15R.

Configuration C: Nuclear Cardiology



(1) Readout Unit & Ion Chamber: Item # 5130-3209 (1) Ion Chamber: Item # 5130-2210 (1) Well Counter: Item # 5130-2214

For the busy nuclear medicine department or growing cardiology clinic, this set up allows maximum flexibility and functionality. The Well counter adds the ability to perform lab tests for regulatory compliance.

Configuration D: Nuclear Medicine & Beta



(1) Readout Unit & Ion Chamber: Item # 5130-3209 (1) Beta Detector: Item # 5130-2213 (1) Well Counter: Item # 5130-2214

This three detector package is ideal for facilities that want a precise, accurate, quick and simple way to count both gamma and beta doses, achieve regulatory compliance for detecting contamination, and to perform lab tests.

Configuration E: Radio-Chemistry



(1) Readout Unit & Ion Chamber: Item # 5130-3209 (1) Expansion Unit: Item # 5120-2268 (5) Ion Chambers: Item # 5130-2210 (1) PET Ion Chamber: Item # 5130-2212

A sample configuration that is cost-effective for the operation of a tracer research laboratory or a clinical dispensing center for nuclear and/or PET tracers.

Configuration F: Ultimate Setup



(1) Readout Unit & Ion Chamber: Item # 5130-3209 (1) Expansion Unit: Item # 5120-2268 (7) Ion Chambers: Item # 5130-2210 (1) Well Counter: Item # 5130-2214 (1) Beta Detector: Item # 5130-2213

For the ultimate network and functionality possible, this configuration will allow users to maximize time and resources while minimizing expenses and space.

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Design Your Department

Design a Calibrator Setup with Your Department's Specific Needs in Mind!

Finding the perfect combination for your department is quick and simple with the CRC-Ultra. Call a Capintec representative today to learn more about the optimal choices for your department's field of expertise!

Supports the Connection of Many Different Combinations of Ion and PET Chambers, Well Counter, and Beta Counter

The flexible configuration of Capintec Beta Detector, Well Counter, and field upgradeable Ion and PET chambers creates an endless possibility of combinations.

The CRC-Ultra can also combine both 12 atmosphere and 5 atmosphere PET chambers, and uses the same outstanding proprietary sealed and pressurized Capintec chambers.

The Choice is Yours: Create a Setup as Simple or as Broad as You Require!

Whether you plan to operate a small setup or something on a grand scale, look to the future with the CRC-Ultra's expansive capabilities. By simply connecting additional units, the CRC-Ultra can adapt to changes as quickly as your department does!

Connect Additional Remote Displays and Printers for Enhanced Functionality



◀ The intelligent remote display unit is controlled by the CRC-Ultra Dose Calibrator. It switches up to (8) pre-set nuclides independently for each chamber, measures bias voltage, Auto Zero, Auto Background, and performs accuracy tests. The remote can be located as far as 100 feet from the main unit.

Item #5130-2211

▶ The Epson roll printer makes an excellent companion to the CRC-Ultra. Compact and ideal in locations where space is a minimum, it uses an easily accessible ribbon cartridge that prints red or black. **Item #5430-0058** The CRC-Ultra also accommodates Okidata, HP Deskjet, and Epson Stylus printers with USB interface.



CRC-Ultra: Readout Unit

- Height: 6 in. (15.2 cm)
- Width: 10.9 in. (27.6 cm)
- Length: 10 in. (25.4 cm)
- Weight: 4.2 lbs. (1.9 kg)
- Power Requirements: 110 to 240 VAC, 0.5A, 50/60 Hz



The CRC-Ultra's comprehensive automated QC includes linearity, geometry and strip tests, and a complete inventory and dispensing module for unit or multi-vial doses. Design includes tilting display, user adjustable backlight, easy to read keypad and audible feedback on keypress. **Item #5130-3209**

CRC-Ultra: Expansion Unit

- Height: 3.7 in. (9.4 cm)
- Width: 10.9 in. (27.6 cm)
- Length: 10.6 in. (27.0 cm)
- Weight: 2.6 lbs. (1.2 kg)



The expansion module is necessary for combinations that utilize more than two Ion Chambers (contains ports for 6 additional Chambers). **Item #5120-2268**

Additional Units: Chamber Assembly

- Height: 18 in. (45.7 cm)
- Weight: 28.3 lb. (12.8 kg)
- Diameter: 6.75 in. (17.2 cm)

The CRC-Ultra can combine both 12 and 5 atmosphere PET chambers. Additional chambers are field upgradeable. Suitable for most BT applications with appropriate source holder. **Item #5130-2210 (Ion), Item #5130-2212 (PET Ion)**



Additional Units: Well Counter

- Height: 9.4 in. (23.8 cm)
- Weight: 15.2 lbs. (6.9 kg)
- Diameter: 6 in. (15.2 cm)

The CRC-Ultra's Well Counter option includes both wipe and lab tests. **Item #5130-2214**



Additional Units: Beta Detector

- Height: 5.6 in. (14.1 cm)
- Weight: 3.3 in. (8.4 cm)
- Length: 18 in. (45.7 cm)
- Weight: 18.6 lbs. (8.4 kg)

The CRC-Ultra's Beta Detector option is optimized for high energy beta measurements. **Item #5130-2213**



Software & Hardware Specifications

Software Features: QC Module

- Auto Zero, Auto Background, bias voltage, accuracy, constancy, linearity, geometry; one, two, or three strip models
- Moly assay-CAPMAC or canister
- Self diagnostics and reference data records

Software Features: Inventory

- Maintains decay corrected inventory levels, generates dose tables, calculates multi-dose vials and unit doses

Software Features: Nuclides

- Over 200 calibration numbers available
- 80 nuclides with stored calibration numbers and half-lives for decay calculations
- User can modify calibration numbers for geometry corrections
- Up to 8 preset keys
- Up to 9 user definable keys

Software Features: Utilities

- Activity units in either Ci or Bq, with lock out feature
- Decay calculation
- Ci to Bq conversion
- Future time calculations

Software Features: Remote

- Dual LCD display
- Switch up to eight preset nuclides independently for each chamber, Measure bias voltage, Auto Zero, and Auto Background
- Perform accuracy test

Software Features: Well Counter

- Auto-calibration includes energy calibration and constancy
- Displays net counts with automatic background subtract
- Six channel fixed MCA
- User-definable wipe test protocols
- Counting error displayed
- Trigger limits to flag high values
- Schilling, Blood Volume and RBC Volume lab tests

Software Features: Beta Counter

- Auto-calibration includes energy calibration and constancy
- Displays net counts with automatic background subtract
- Six channel fixed MCA
- Stores reference, vial, and syringe correction factors for each nuclide
- Stores efficiencies for both 10 cm and 20 cm locations
- Count rate corrections

Software Features: Interface

- RS-232 or USB bi-directional ports
- Software controlled switching features

Software Features: PC Features

- Change isotope for any chamber in system
- Select chamber displayed on main unit
- Request measurement value for any chamber
- Perform background, zero, bias voltage, and daily test
- Export data to database
- Measure wipe test value from Well counter
- Measure activity from Beta counter
- Enhanced PC control allows user to control readout through the PC

Hardware Specifications: Dose Calibrator

- Thin walled, pressurized, deep well re-entrant ionization chamber
- Ultra Pure Argon fill gas
- Electronic bias supply
- Measurement Range (Auto Ranging)
- Maximum Activity: 300 GBq (8.0 Ci in Moly Assay Cannister) for standard 12 atm chambers
- 500 GBq (12 Ci) for PET chamber
- Maximum Resolution: 0.001 MBq (0.01 uCi) 0.01 MBq (0.1 uCi) for PET chamber
- Measurements will repeat to within +/- 0.5% within 24 hours during which time the calibrator is powered at all times
- Electrometer Accuracy < 2%, linearity +/- 2%, response time: 2 Seconds
- 12 foot standard cable length, optional extension cables up to 200 feet

Hardware Specifications: Well Counter

- Type: 1 1/2 inch Sodium Iodide (NaI) drilled-well crystal detector
- Energy Discrimination: Fixed range MCA windows are 15-100, 100-200, 200-400, 400-660, 660-800, 800 keV
- 2.7 m (9 ft) triax cable
- Shielded with 1.3 cm (1/2 in.) painted lead including top shield
- Optional auxiliary 1/2 in. lead shield available

Hardware Specifications: Beta Counter

- Type: Thin Sodium Iodide (NaI) scintillator optimized for bremsstrahlung sensitivity
- Sample Distance: 10 cm (4") and 20cm (8")
- Counting Rate: 50,000 counts per second, max. (25 to 100m Ci pure beta emitter)
- Shielding: 1.3 cm (1/2 in.) lead collimator
- 2.9 m (9.5 ft) triax cable
- Optional auxiliary 1/2 in. lead shield available

Hardware Specifications: Multiple Chambers

- Up to two chambers, well detector and beta detector connect directly to readout
- Additional chambers require an expansion unit

Additional Components



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▲2



▲3



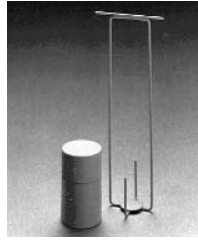
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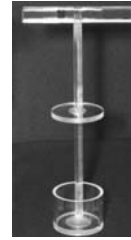
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- 1▶ **Acrylic L-Beta Shield:** Item #5130-2083
- 2▶ **Mini Clear-pb® L-Block Shield:** Mini: Item #5730-0033 • Standard: Item #5730-0031 • Jumbo: Item #5730-0032
- 3▶ **Mounting Flange:** Item #7310-2307
- 4▶ **CRC®MF Chamber Mounting Flange:** Item #7300-2785
- 5▶ **Reference Sources:** Co-57 vial/3 mCi: Item #0975-0573 • Co-57 vial/5 mCi: Item #0975-0006 • Co-57 vial/10 mCi: Item #0975-5710 • Cs-137 vial/100 µCi: Item #0975-0002 • Cs-137 vial/200 µCi: Item #0975-3720 • Cs-137 vial/250 µCi: Item #0975-3725 • Ba-133 vial/250 µCi: Item #0975-0002 • Co-60 vial/100 µCi: Item #0975-0001
- 6▶ **CAP-MAC®S Molly Assay Canister for Syringes:** Item #5130-2046
- 7▶ **Molly Assay Canister:** Item #5130-0006
- 8▶ **Chamber Well Insert:** Item #7300-2004
- 9▶ **Vial/Syringe Sample Holder:** Item #7310-2005

- 10▶ **I-125 Cartridge Holder:** Item #5120-1238
- 11▶ **C-Tec™ Syringe Shields:** 1cc: Item #4300-0030 • 3cc: #4300-0031, 5cc: #4300-0032 • 10cc: #4300-0033
- 12▶ **Pin-Tec™ Syringe Shields:** 1cc: Item #4300-0034 • 3cc: #4300-0035, 5cc: #4300-0036 • 10cc: #4300-0037
- 13▶ **Epson Roll Printer:** Item #5430-0058
- 14▶ **Epson Ticket Printer:** Item #5430-0100
- 15▶ **CAP-MAC®2:** Mallinckrodt: Item #5130-0108 • NEN/Dupont: Item #5130-0109
- 16▶ **CRP-200 Dose Tickets & Labels:** Item #7120-1199
- 17▶ **CRP-500 Radionuclide Dose Tickets:** Item #7120-1016
- 18▶ **CRP-600 Radiochemical Purity Tickets:** Item #7120-1018
- 19▶ **CRP-700 Pre-Cal Record Tickets:** Item #7120-1017